REMARKS

This application is a National Phase Application of PCT Application No. PCT/IL2006/000015 having International Filing Date of January 4, 2006.

Claims 17 and 40 have been previously amended to remove multiple dependent claims and reduce costs, but both have been amended herein, as well.

The present amendment is made in response to the "International Preliminary Report on Patentability (Chapter I), mailed on August 9, 2007.

In addition, new claims 70 – 91 have been added.

Support for the added matter is provided below.

The "International Preliminary Report on Patentability" cites Bambot, et al., who describe an endoscope that includes an optical fiber bundle, which can convey excitation electromagnetic radiation from a radiation source to a target tissue. Their endoscope also includes a return optical fiber bundle for communicating reflected/scattered electromagnetic radiation or fluorescent emissions from a target tissue to a detector.

Bambot et al. illuminate the tissue, and analyze reflected electromagnetic radiation returned from the target. They also look at fluorescent emissions from the target tissue, which is again in the visible range.

Yet the electromagnetic sensor of the presnt invention is operative in an electromagnetic frequency range of less than 100 Ghz, as recited in amended independent claims 1, 21, 44, 51, 59, and 69. It may further be limited to operation in an electromagnetic frequency range of less than 10 Ghz, as recited in new claims 81 and 85.

The basis for the limitation of the electromagnetic frequency range is as follows:

On Page 9, Lines 31 – 32, of the present invention, it is stated:

"a sensor for tissue characterization, ..., wherein λ is at least about ten times the diameter-equivalent D,"

On Page 13, Lines 7 – 11, of the present invention, it is stated:

"Preferably, ... the sensor 52 is between about 0.3 and 3 mm in diameter, ... It will be appreciated that other dimensions, which may be larger or smaller, may similarly be used."

Thus, for a sensor diameter of 0.3 mm, λ is at least 3 mm, leading to a frequency of less than 100 Ghz, as stated in amended independent claims 1, 21, 44, 51, 59, and 69.

Similarly, for a sensor diameter of 3 mm, λ is at least 30 mm, leading to a frequency of less than 10 Ghz, as stated in new claims 81 and 85.

While original independent claims 1, 21, and 69 recited "a nonirradiative electromagnetic sensor," the present recitation of the independent claims is of "an electromagnetic sensor," based on Page 10, Lines 7 – 8 of the present application:

"It will be appreciated that in accordance with embodiments of the present invention, other electromagnetic sensors may be used."

New endoscope claim 78, system claim 71, and method claim 82 recite a nonirradiative electromagnetic sensor, as originally recited in original independent claims 1, 21, and 69, and as stated in Page 9, Line 11:

"The sensor 52 may be a nonirradiative electromagnetic sensor for tissue characterization.."

New endoscope claims 72, 73, 74 derive support from the recitation of original method claims 26, 27, 28.

New endoscope claims 75, 76, 77 derive support form Page 14 Line 11 – 24, as follows:

"As seen in Figure 5B the flexible tubing 40 of the endoscope 30 moves within the body lumen 64, but entry is percutaneous, at an entry point 74. Preferably, the sensor 52 is associated with a sharp edge 76, to facilitate the entry. For example, the lumen may be a blood vessel, and the entry point may be a femoral vain or a jugular vain. It will be appreciated that other points of percutaneous entry are similarly possible."

"As seen in Figure 5C, the entry point is a bodily orifice, but for characterizing the tissue 60, beyond the lumen 64, the sensor 52 penetrates the lumen 64 at a point

72. Preferably, the sensor 52 moves within the lumen to a point as near as possible to the site for measurement, then penetrates the lumen. Preferably, the sensor 52 is associated with the sharp edge 76, to facilitate the penetration."

"As seen in Figure 5D, the sensor 52 enters the lumen percutaneously, at the entry point 74 and penetrates the lumen 64 at a point 72, for characterizing the tissue 60 beyond the lumen 64."

New claims 79 and 83 relate to matter described on Page 9 Lines 11 – 20, as follows:

"The sensor 52 may be a nonirradiative electromagnetic sensor for tissue characterization, for example, as taught in commonly owned US Patent 6,813,515, to Hashimshony, whose disclosure is incorporated herein by reference. US Patent 6,813,515 describes a nonirradiative electromagnetic sensor, which applies an electrical pulse to a tissue, thus generating an electrical fringe field in the zone of the tissue and producing a reflected pulse therefrom with negligible radiation penetrating into the tissue itself. The sensor detects the reflected electrical pulse and compares the electrical characteristics of the reflected electrical pulse with respect to the applied electrical pulse to provide an indication of the dielectric properties of the examined tissue."

New claims 80 and 84 relate to matter described on Page 9 Line 21 to Page 10 Line 6, as follows:

"Alternatively, the sensor 52 may be a nonirradiative electromagnetic sensor for tissue characterization, as taught in commonly owned US Patent Application 60/665,842, whose disclosure is incorporated herein by reference. US Patent Application 60/665,842 describes a sensor for tissue characterization, comprising: a resonating element, formed as a conductive structure, configured to be placed proximally to an edge of a tissue for characterization, without penetrating the tissue, and having a diameter-equivalent D, which defines a cross-sectional area of the resonating element, on a plane substantially parallel with the edge; and at least one conductive lead, for providing communication with an external system, wherein the resonating element is configured to resonate at a free-air wavelength range of between about λ and about 10λ, wherein λ is at least about ten times the diameter-equivalent

D, and wherein upon receiving a signal in the range of between about λ and about 10λ, the sensor is configured to induce electric and magnetic fields, in a near zone, in the tissue, the near zone being a hemisphere having a diameter of substantially D, beginning with the edge, while causing negligible radiation in a far zone, so that the tissue, in the near zone, effectively functions as part of the resonating element, varying a resonating response to the sensor, and so the tissue, in the near zone, is thereby characterized by its electromagnetic properties, by the resonating response to the sensor."

The amendment to method claim 23 relates to matter described on: Page 10 Line 30 - 33, as follows:

"Alternatively, the catheter 48 is not used, yet the instrument bundle 50 may extend beyond the distal tip 42 of the endoscope, and a distal-most end of the instrument bundle 50 may be manipulated, extracorporeally, to bring the sensor 52 to contact with the tissue 60, for characterization."

New method claims 86 – 89 and new endoscope claims 90 and 91 relate to matter described on: Page 10 Line 21 - 27, as follows:

"Preferably, the catheter 48 has a distal tip 47, which may extend beyond the distal tip 42 of the endoscope. Additionally, the catheter 48 may be manipulated, independent of the tubing 40, via the instrument bundle 50, as seen in Figures 3A – 3C, so that the sensor 52 may be brought in contact with a specific location of a tissue 60, such as the inner wall of a body lumen or another tissue location, for characterizing a suspected anomaly 62, as seen in Figures 3A and 3B. The manipulation of the catheter 48 may be mechanical, for example, via wires, or electronic, as known."

New system claim 70 relates to matter described on: Page 8 Line 15 - 19, as follows:

"The endoscopic system 10 preferably includes an extracorporeal control station 20, having a control unit 22, preferably, having control buttons 23, and possibly also, an input interface, such as a keyboard 26, and a read/write device 27. The control unit 22 is in communication with a signal analyzer 25, and possibly, with a display screen 24."

The application now comprises claims 1- 91, of which claims 1, 21, 44, 51, 59, and 69 are in independent form.

An early and favorable action is respectfully requested.

Respectfully submitted,

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Date: April 7, 2008

Enclosed:
Additional Claim Transmittal